AD-A124 954 MANUFACTURING METHODS AND TECHNOLOGY (MM&T) 1/1
SPECIFICATIONS FOR MINIATURE CATHODE RAY TUBE(U) THOMAS
ELECTRONICS INC WAYNE NJ F M BRUNO 31 OCT 82
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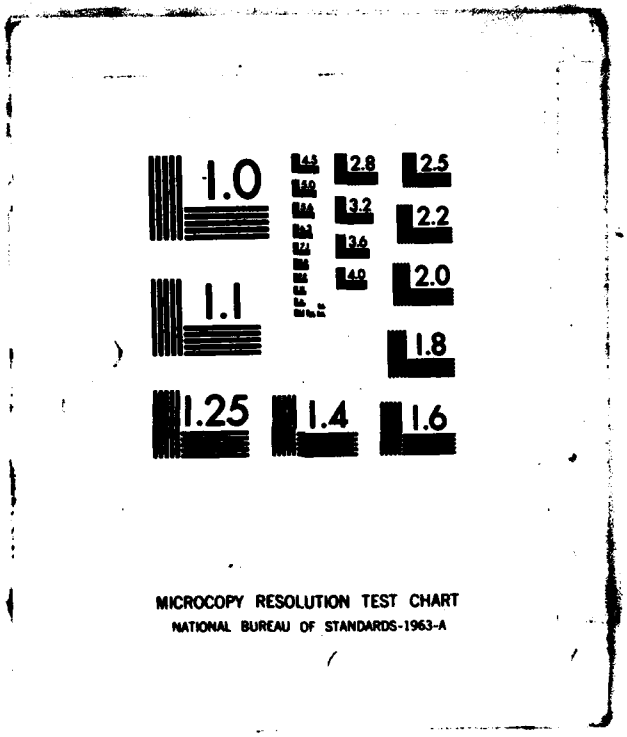
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Miniature cathode ray tube

1-in.

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Two CRT assemblies for the 3rd Submission of Phase I - Engineering Samples were source-tested, approved, and accepted by NV&EOL. This successfully concluded the Phase I Engineering Sample requirements of the ~~1~~ MM&T program. TEI began to manufacture CRT assemblies for Phase II - Confirmatory Samples, but placed a hold on production because of inconclusive results during

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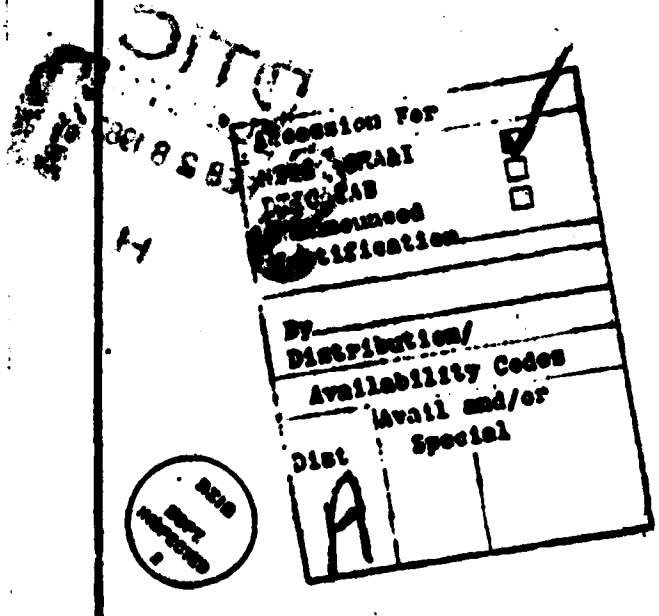
20. ABSTRACT (contd.)

pre-qualification testing. New Five-Position Test Consoles and Test Fixtures became operational. TSI's ATP (Acceptance Test Procedure) was prepared and a draft was submitted to NWSEOS for review and approval.



Manufacturing Methods and Technology (MM&T) Specifications for Miniature Cathode Ray Tube

EIGHTH QUARTERLY REPORT

for period

1 July 1982 - 30 September 1982

The object of this study is to develop design, performance, and test specifications for the Miniature Cathode Ray Tube (CRT) assembly suitable for use in the Integrated Helmet and Display Sight System (IHADSS) of the Army Advanced Attack Helicopter (AAH).

Contract Number: DAAK70-80-C-0168

Approved by:

M. L. Beasty
Vice President - Engineering

Approved by:

F. M. Bruno
Program Manager

Approved for public release; distribution unlimited

ABSTRACT/SUMMARY

Two CRT assemblies for the 3rd Submission of Phase I - Engineering Samples were source-tested, approved, and accepted by NV&EOL. This successfully concluded the Phase I Engineering Sample requirements of the 1" MM&T program. TEI began to manufacture CRT assemblies for Phase II - Confirmatory Samples, but placed a hold on production because of inconclusive results during pre-qualification testing. New Five-Position Test Consoles and Test Fixtures became operational. TEI's ATP (Acceptance Test Procedure) was prepared and a draft was submitted to NV&EOL for review and approval.

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1.0 PURPOSE

The purpose of this Manufacturing Methods and Technology (MM&T) contract is to establish production methods and facilities required to produce the Miniature Cathode Ray Tube Assembly required for the Integrated Helmet and Display Sight System (IHADSS) of the Army Advanced Attack Helicopter (AAH).

The primary objectives are to develop vendor sources for the required individual components and establish viable production techniques to meet the necessary monthly production rate. The product produced will be required to meet the mechanical, electrical, performance, and environmental parameters of MM&T H799838.

2.0 GLOSSARY

AAH	Advanced Attack Helicopter
ATP	Acceptance Test Procedure
CDRL	Contract Data Requirements List
COR	Contracting Officer's Representative
CRT	Cathode Ray Tube
EM	Equipment Manufacturer
IHADSS	Integrated Helmet and Display Sight System
MERADCOM	Mobility Equipment Research and Development Command
MM&T	Manufacturing Methods and Technology
MOD	Modification (to Contract)
NV&EOL	Night Vision & Electro-Optics Laboratory
PCO	Procuring Contracting Officer
PERT	Program Evaluation and Review Techniques
TEI	Thomas Electronics, Inc.
TIR	Total Indicated Range

3.0 NARRATIVE AND DATA

In early July, two CRT assemblies for the 3rd Submission of Phase I - Engineering Samples were source-tested and approved by the Contracting Officer's Representative (COR) during a visit to TEI. This successfully concluded the Phase I Engineering Sample requirements of the 1" MM&T program. Because some modifications to the contract had not been included in a MOD sent to TEI, written approval for the additional modified factors was requested by letter from TEI to the Procuring Contracting Officer (PCO).

In its continuing effort to evaluate seamed versus seamless Mu-Metal shields, TEI received a quote from the vendor with high cost for both tooling and small lot. TEI therefore delayed a decision to place a purchase requisition pending further evaluation of test results with existing lap-seam shields and comparison of production costs.

Comparison data on life-testing of the P43 phosphor with fiber optic and with clear faceplates became available for 4,015 hours of testing. The respective CRT screens and faceplates had received 71.75 C/CM^2 of charge per unit area (Coulomb/CM^2). The phosphor-aging characteristic appeared to be well within the industry-accepted value of greater than 50 C/CM^2 to the 50% point for P43.

See test results which follow.

4015 Hours Efficiency Test Results

Screen Efficiency (Lumens Per Watt)	Non-Browning Clear Faceplate	Fiber Optic Faceplate
Unburned Area 3/16" x 15/32"	17.74	11.3
Burned Area (Rest of Screen)	12.7	9.6
% Drop	28%	15%
Coulombs Per CM Square	71.75	71.75

Two Five-Position Burn-In Test Consoles for Qualification and/or Reliability testing were built. One was burned-in and became operational; the other was being burned-in. A Five-Position Fixture for vibration testing was built, was accepted by TEI's Quality Assurance Department, and became ready for use.

A hold was placed on production of CRT assemblies for Phase II - Confirmatory Samples because of inconclusive results obtained on pre-qualification tests. However, a kit of gun parts was being prepared and would be gun-rodded in anticipation of successful results of pre-qualification vibration tests conducted with the recently-received Five-Position Fixture mentioned above.

TEI prepared an Acceptance Test Procedure (ATP) and submitted a draft to NV&EOL for review and approval.

4.0 CONCLUSIONS

Two CRT assemblies were tested and approved by NV&EOL for the 3rd Submission of Phase I - Engineering Samples. This successfully concluded the Phase I Engineering Sample requirements of the 1" MM&T program.

Although TEI had started to manufacture and test CRT assemblies for Phase II - Confirmatory Samples, a hold was placed on production because of inconclusive results during pre-qualification testing. It was anticipated that successful results would be obtained from tests run with the recently-obtained Five-Position Burn-In Test Consoles and a Five-Position Fixture for vibration testing.

TEI's Acceptance Test Procedure (ATP) was prepared for use in Phases II and III of the contract and a draft was submitted to NV&EOL for review and approval.

5.0 PROGRAM FOR NEXT INTERVAL

For the next quarter, TEI's plans are as follows:

1. Fabricate and test CRT assemblies for Phase II - Confirmatory Samples.
2. Maintain detailed test records for compiling into technical data items required by the contract.
3. Prepare and submit monthly status reports and also the draft and final quarterly reports.

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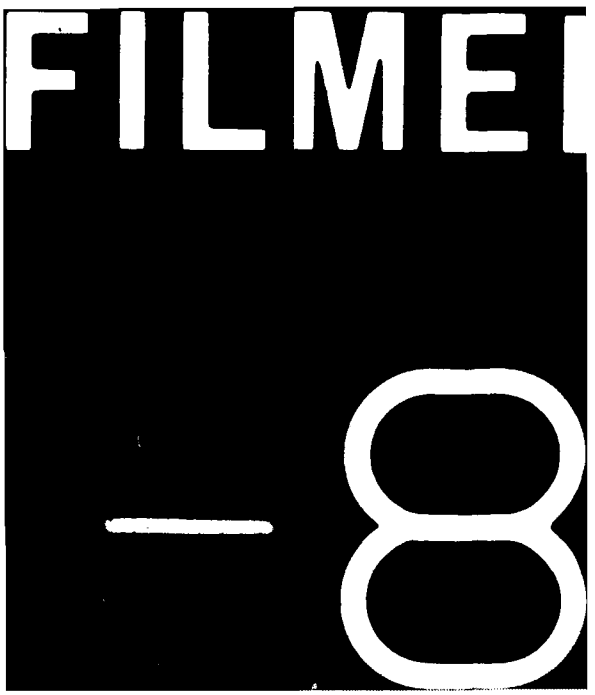
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